



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/561,347

12/19/2005

Louis W. Lherbier

0008-CA323US

5974

110 7590 09/20/2007
DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

EXAMINER

MAI, NGOCLAN THI

ART UNIT

PAPER NUMBER

1742

MAIL DATE

DELIVERY MODE

09/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,347	Applicant(s) LHERBIER ET AL.	
	Examiner Ngoclan T. Mai	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 6-8 and 10 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendment filed 7/3/07 has been entered. Currently, claims 1-10 are under examination, wherein claims 1, 4, 6 and 9 are amended.

Specification

2. The amendment filed 7/3/07 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "per square inch (tsi)" added to the specification has no support in the specification as originally filed.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 4 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of the pressure unit to "tsi" has no support in the specification as originally filed and applicant has not explained or pointed out where or how such limitation is derived.

Art Unit: 1742

5. Applicant's arguments, see pages 6-12 filed 7/3/07 with respect to the rejection(s) of amended claim(s) 1-3, 5-8, and 10 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nishi or Furuta et al and Moritoki et al.

Claim Rejections - 35 USC § 103

6. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi et al. (U.S. Patent No. 5,625,861) in view of Moritoki et al. (U.S. Patent No. 4,478,626).

Regarding claim 1, Nishi et al disclose a process for producing porous metal body having controlled porosity, comprising:

preparing metal powder by gas atomization, col. 4, lines 56-59;

filling a metal capsule (i.e., container) with the metal powder, col. 2, lines 49-51, subjecting the container containing metal powder to primary sintering treatment in an isostatic medium (HIP) to form a primary sintered porous body and heat treating the primary sintered body. See col. 2, lines 47-54.

Nishi et al differ from the claim in that Nishi et al do not specifically teach surrounding the powder-filled container in the metal vessel with glass frit and heating the metal vessel to a temperature sufficient to melt the glass frit; and then compacting the metal vessel under sufficient pressure to partially consolidate the metal powder so as to retain porosity therein in an amount sufficient to permit air to vent through the metal tool.

Art Unit: 1742

Moritoki et al disclose a method of hot isostatic pressing wherein a shaped work formed of metal or ceramic powder immersed in molten glass is subjected to hot isostatic pressing treatment comprising embedding a shaped work in glass powder filed in a metal crucible, heating the crucible to soften and melt the glass and subjecting the work in the crucible to a HIP treatment. See abstract and col. 3, lines 21-53. Moritoki et al teach the process as taught shortens the time period of the HIP cycle significantly, col. 2, l. 9-16. Moritoki et al teach employing Pyrex glass as the pressure medium and employing temperature of at least 1000 C to melt the Pyrex glass. See col. 5, lines 8-16.

In view of Moritoki et al's teaching it would have been obvious to one of ordinary skill in the art at the time the invention was made that glass powder be used as the isostatic medium in the HIP process of Nishi to significantly reduce the processing time, enhancing the operational efficiency and productivity of the costly HIP system. As for claim 3, it would also be obvious to heat the glass in the process of Nishi in view of Moritoki at the claimed temperature to effectively melting the glass medium as taught by Moritoki.

As for claim 2, Nishi et al teach tool steel powder is used. See col. 3, line 66 to col. 4, line 1.

Regarding claim 5, Nishi et al do not specifically teach screening the metal powder to provide a powder particle size that is appropriate for the type for which the metal tool will be used. However such step is inherently included in the process of Nishi et al because Nishi et al teach employing metal powder having a particle-size-distribution, therefore to obtain such particle size distribution Nishi et al must have screen the metal powder to obtain the desirable distribution of particle sizes. See col. 4, lines 9-17.

Art Unit: 1742

7. Claims 1, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuta et al. (5,850,590, previously cited) in view of Morioki et al. (U.S. Patent No. 4,478,626).

Furuta et al. disclose a method for making porous sintered product comprising setting a metal capsule which contains a starting powder formed by gas atomization in a hermetically sealed condition, in a pressure-resistant container and subjecting the capsule to an hot isostatic pressing process (HIP). See abstract and col. 10, lines 62-67.

Furuta et differs from the claims in that Furuta et al does not specifically teach placing the powder-filled capsule in a metal vessel and surrounding the capsule in the vessel with glass frit and heating the metal vessel to melt the glass frit in the HIP process.

Moritoki et al. discloses a method of hot isostatic pressing wherein a shaped work immersed in molten glass is subjected to hot isostatic pressing treatment comprising embedding a shaped work in glass powder filed in a metal crucible, heating the crucible to soften and melt the glass and subjecting the work in the crucible to a HIP treatment. See abstract and col. 3, lines 49-53. Moritoki et al teach the process as taught shortens the time period of the HIP cycle significantly, col. 2, l. 9-16. Moritoki et al also teach employing Pyrex glass as the pressure medium and employing temperature of at least 1000 C to melt the Pyrex glass. See col. 5, lines 8-16.

In view of Moritoki et al's teaching it would have been obvious to one of ordinary skill in the art at the time the invention was made that glass powder be used as the isostatic medium in the HIP process of Furuta et al to significantly reduce the processing time, enhancing the operational efficiency and productivity of the costly HIP system. As for claim 3, it would also be obvious to heat the glass in the process of Furuta in view of

Art Unit: 1742

Moritoki at the claimed temperature to effectively melting the glass medium as taught by Moritoki.

Regarding claim 5, Futura in view of Moritoki et al do not specifically teach screening the metal powder to provide a powder particle size that is appropriate for the type for which the metal tool will be used. Nishi et al teach employing coarse size metal powder and fine size metal powder (col. 15, lines 5-13). It would have been obvious to one skilled in the art to screen the metal powder of Futura et al in view of Moritoki to obtain metal powder having the desired coarse and fine sizes.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuta et al (5,850,590) and Moritoki et al (U.S. Patent No. 4,478,626) as applied to claim 1 above, and further in view of Nishi et al. (U.S. Patent No. 5,625,861).

Furuta et al in view of Moritoki et al. differ from the claim in that there is no teaching of employing tool steel powder.

Nishi et al teach method for making porous mold employing stainless steel, tool steel, maraging steels, high speed steels, etc. See col. 3, line 55 to col. 4, line 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the stainless steel powder in the method of Furuta et al in view of Moritoki et al. with tool steel powder taught by Nishi et al as tool steel is taught for use making porous molded body where stainless steel is normally used.

9. Claims 6-8 and 10 are deemed allowable because there is no teaching or motivation to bond metal powder to a fully consolidated metal piece metal by the claimed method step so as to retain porosity in an amount sufficient to permit air to vent through the meal tool.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

n.m.

2

NOT RECORDED
U.S. PATENT & TRADEMARK OFFICE
WASHINGTON, D.C. 20503